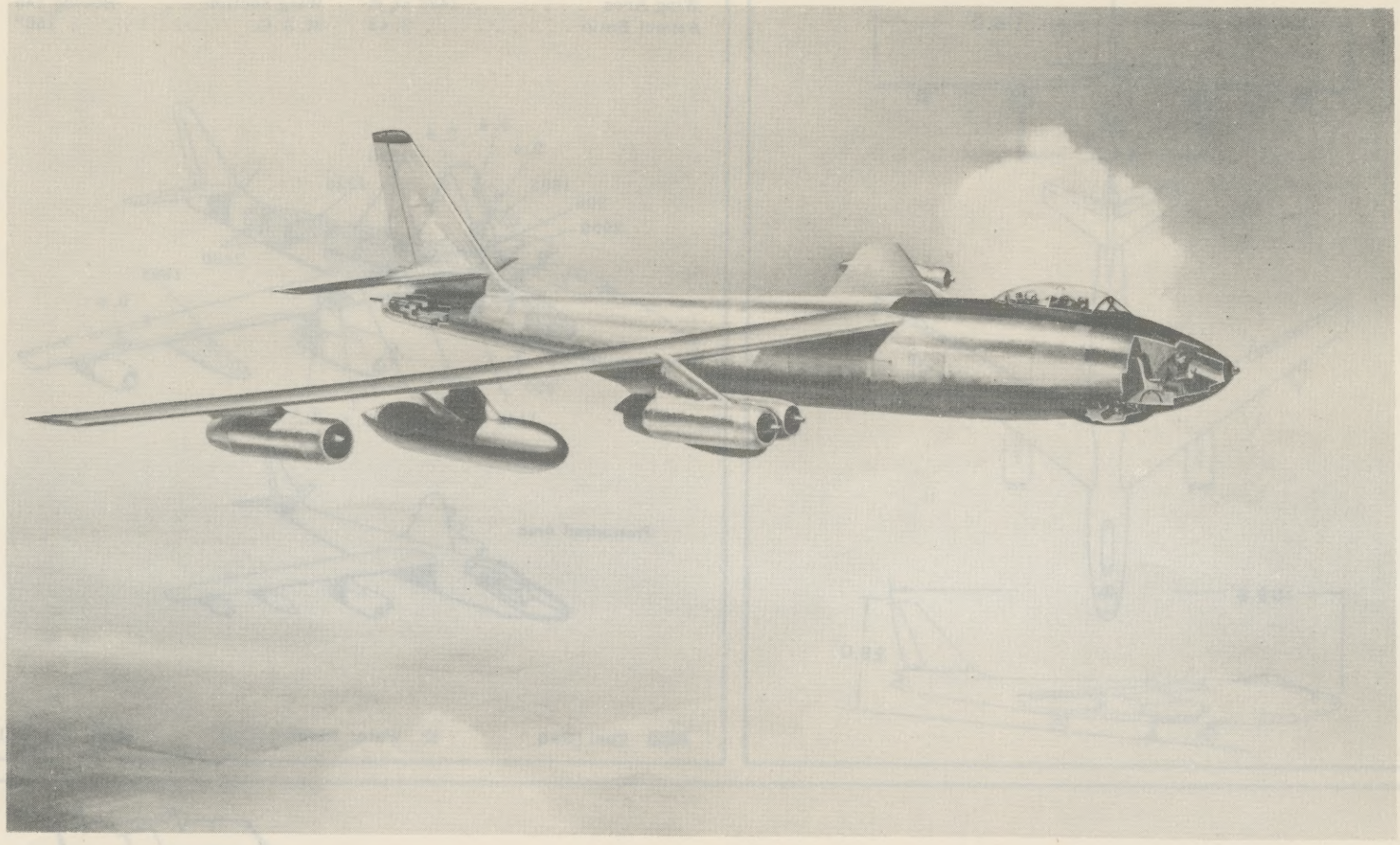


Standard Aircraft Characteristics

BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

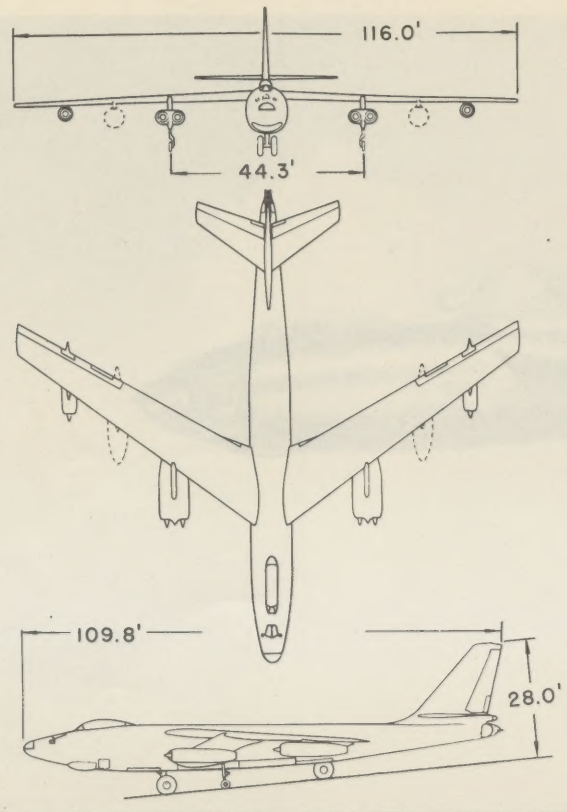
RB-47E

STRATOJET

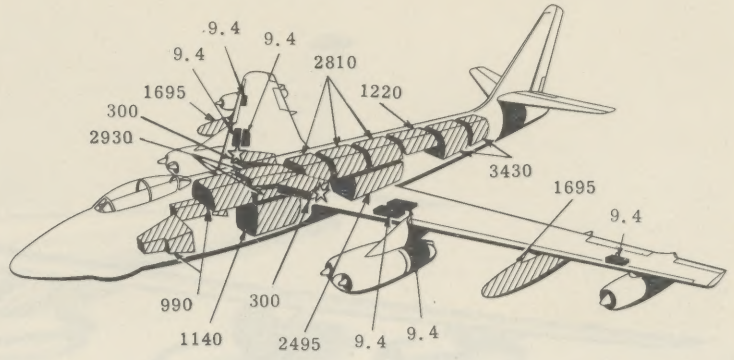
Boeing

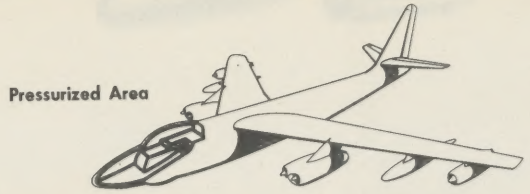
SIX J47-GE-25

GENERAL ELECTRIC

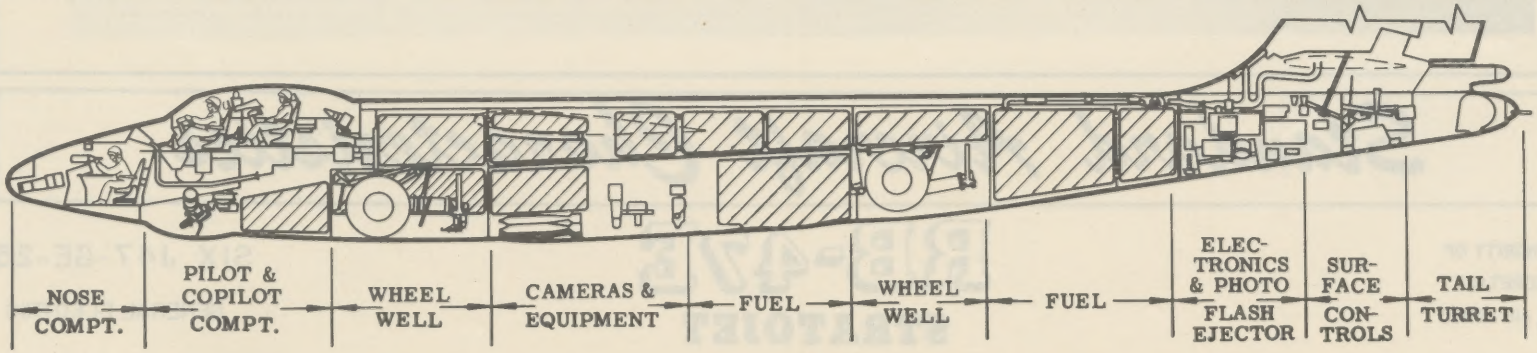


Wing Area . . . . . 1428 sq ft
Aspect Ratio 9.43
Wing Section . . . . Boeing 145
M.A.C. . . . . 156"





▨ Fuel (Gal) ☆ Water Alcohol (Gal) ■ Oil (Gal)



POWER PLANT

No. & Model . . . . .(6)J47-GE-25
Mfr . . . . . General Electric
Engine Spec No. E-597
Type . . . . . Axial Flow
Length . . . . . 148"
Diameter . . . . . 39.5"
Weight (dry) . . . . . 2707 lb
Tail Pipe . . . . . Fixed Area
Augmentation . . . Water/Alcohol ATO
No. & Model . . . .*(33) 14AS1000

Mfr. . . . . Aerojet
Weight(loaded) . . . . . 200 lb ea
or
No. & Model . . . .(19) 15KS1000
Mfr . . . . . Aerojet
Weight (loaded) . . . . . 131 lb ea
*See note h, page 6

ENGINE RATINGS

S.L.Static LB - RPM - MIN

Max:	*7200	- 7950 - 5
	5970	- 7950 - 5
Mil:	5670	- 7800 - 30
Nor:	5320	- 7630 - Cont

*wet water flow of 650 lb/min ATO

Thrust (lb) 33,000
Duration (sec) 14
or
Thrust (lb) 19,000
Duration(sec) 15

Mission and Description

Navy Equivalent: None Mfr's Model: 450-158-36

The principal mission of the RB-47E is strategic photo-reconnaissance. Alternate missions are day and night mapping, charting and bomb damage assessment.

The normal crew consists of pilot, co-pilot and photo-navigator.

Features incorporated for improved crew comfort and efficiency are automatic heating, ventilation, pressurization. NESA glass de-icing for the pilot's windshield, de-frosting of windshield, nose window and other transparent sections by recirculated cabin air, thermal anti-icing for wings and empennage, and hydraulic boost on all control surfaces. Crew ejection seats are provided for in-flight escape. The pilot and co-pilot are ejected upward and the photo-navigator downward.

The water/alcohol injection system utilizes a total tank capacity of 600 gallons which is divided into six individual bladder-type tanks, three each located in the inboard section of the right and left wing.

Solid propellant rockets are installed externally for assist take-off with a droppable rack.

A two-gun tail turret incorporating a radar computer at the co-pilot's station is installed. A rotatable seat allows the co-pilot to face aft while functioning as the A-5 Fire Control System operator.

Other features are single-point and air refueling, an approach chute to increase drag, a drag chute for decreasing landing roll distance and an anti-skid braking device.

Development

The RB-47E differs from the RB-47B by the installation of the J47-GE-25 engine and strengthening of landing gear to permit heavier T.O. weight.

WEIGHTS

Loading	Lb	L. F.
Empty	81,100 (E)	
Basic	83,190 (E)	
Design	125,000	3.0
Combat	*130,800	
Max T.O.	†200,000	2.0
Max In-Flight	‡202,000	2.0
Max Land	†180,000	

(E) Estimated
* For Basic Mission
† Limited by strength
‡ With external tanks

FUEL

Location	No. Tanks	Gal
Fwd, Main*	1	2930
Fwd, Aux*	1	990
Center, Main*	1	2810
Fwd, Bomb Bay	1	1140
Aft, Bomb Bay	1	2495
Aft, Main*	1	3430
Wg, Drop	2	3390
ATO Tank	1	1220
*Self-sealing	Total	18,405

Grade JP-4
Specification MIL-F-5624A
See note (f) page 6

OIL

Wing . . . . . 6 . . .(tot) 56.4
Grade 1005
Specification MIL-L-6081A

WATER/ALCOHOL

Wg, inbd 6. 600

DIMENSIONS

Wing	
Span	116.0'
Incidence	2°45'
Dihedral	0°
Sweepback (LE)	36°37'
Length	109.8'
Height	28.0'
Tread (outrigger)	44.3'

BOMBS

No.	Class (lb)
10 Flash Bombs (M-120)	154
200 Photo Flash Cart. (M-112)	1

GUNS

No.	Type	Size	Rds ea	Loc.
2	M24A1	20mm	350	Fus,Tail

CAMERAS

No.	Type	Lens
	Forward Oblique Station	
1	K-38	24"
	Tri-Metrogon Station	
3	KA-3	6"
	Vertical Station	
1	K-38	24" or 36"
	or	
1	T-11	6"
	or	
1	K-37	12"
	Split Vertical Station	
2	K-38	24" or 36"
	or	
2	K-37	12"

ELECTRONICS

VHF Command	AN/ARC-27
Liaison	AN/ARC-21
Interphone	AN/AIC-10
Radio Compass	AN/ARN-6
Marker Beacon	AN/ARN-12
Glide Path	AN/ARN-18
Fire Control	A-5
Omni-Direct. Revc'r	AN/ARN-14
Rendezvous Radar	AN/APN-76
*ECM (2)	AN/APT-5A
IFF	AN/APX-6
Bombing Nav. Radar	AN/APQ-31A
Chaff Dispenser	AN/ALE-1
Warning Radar	AN/APS-54

*See Note (g) page 6

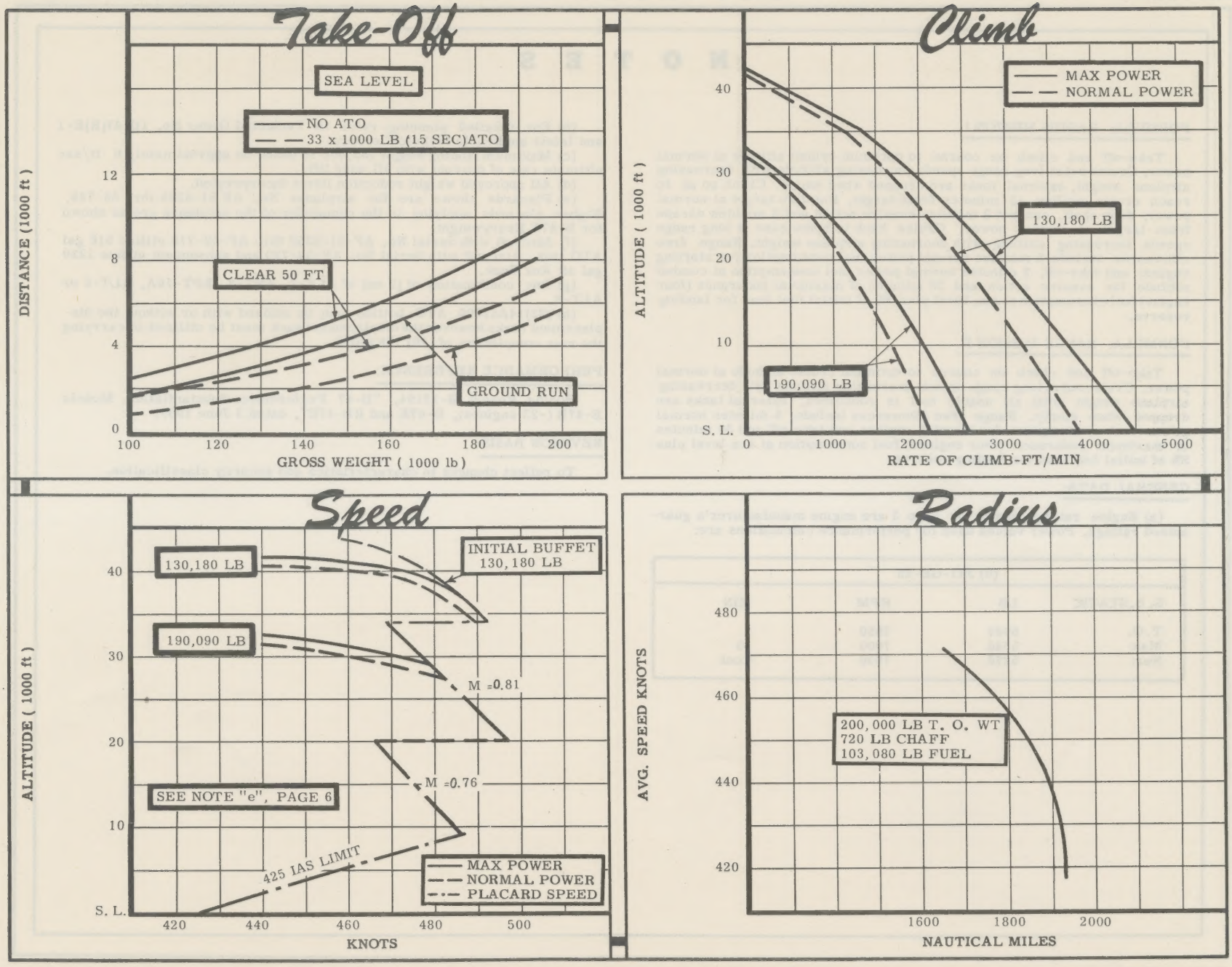
Loading and Performance—Typical Mission

CONDITIONS			BASIC MISSION	FERRY RANGE
			I	II
TAKE-OFF WEIGHT	⑥	(lb)	200,000	200,000
Fuel at 6.5 lb/gal (grade JP-4)		(lb)	103,080	103,800
Payload (Chaff)		(lb)	720	None
Wing loading		(lb/sq ft)	133.2	133.2
Stall speed (power off)	⑧	(kn)	157	157
Take-off ground run at SL	①	(ft)	8050	8050
Take-off ground run with ATO ⑤	①	(ft)	5650	5650
Take-off to clear 50 ft	①	(ft)	9450	9450
Take-off to clear 50 ft with ATO ⑤	①	(ft)	7100	7100
Rate of climb at SL	⑧ ③	(fpm)	2110	2110
Rate of climb at SL(one eng. out)	⑧ ②	(fpm)	1680	1680
Time: SL to 20,000 ft	③	(min)	11.6	11.6
Time: SL to 30,000 ft	③	(min)	21.0	21.0
Service ceiling (100 fpm)	⑧ ③	(ft)	31,500	31,500
Service ceiling (one eng. out)	⑧ ②	(ft)	28,200	28,200
COMBAT RANGE	④	(n. mi)	———	3935
COMBAT RADIUS	④	(n. mi)	1915	———
Average cruise speed		(kn)	433	433
Initial cruising altitude		(ft)	30,100	30,100
Target speed	③	(kn)	465	———
Target altitude		(ft)	39,200	———
Final cruising altitude		(ft)	43,500	43,500
Total mission time		(hr)	8.92	9.15
COMBAT WEIGHT		(lb)	130,180	94,020
Combat altitude		(ft)	39,200	43,500
Combat speed	②	(kn)	478 ⑨	487 ⑨
Combat climb	②	(fpm)	600	1050
Combat ceiling (500 fpm)	②	(ft)	39,800	46,400
Service ceiling (100 fpm)	③	(ft)	41,100	47,800
Service ceiling (one eng. out)	③	(ft)	38,500	44,700
Max rate of climb at SL	②	(fpm)	4470	6160
Max speed at 20,000 ft	⑨	(kn)	497 ⑨	497 ⑨
Basic speed at 35,000 ft	②	(kn)	490 ⑨	495 ⑨
LANDING WEIGHT		(lb)	93,984	94,020
Ground roll at SL		(ft)	4600	4600
Ground roll (auxiliary brake)	⑦	(ft)	2650	2650
Total from 50 ft		(ft)	5500	5500
Total from 50 ft (auxiliary brake)	⑦	(ft)	3550	3550

NOTES

① T.O. power
② Max power
③ Normal power
④ Detailed descriptions of Radius and Range missions given on page 6.
⑤ With 33,000 lb (ATO) thrust. (See note (h), page 6)
⑥ Includes 4610 lb ATO and 5300 lb water and alcohol
⑦ With braking parachute
⑧ Values quoted are for T.O. weight less ATO, water & alcohol
⑨ Placard Speed

Performance Basis:
(a) Data source: Flight Test
(b) Performance is based on powers shown on page 6


Take-Off
SEA LEVEL
NO ATO
33 x 1000 LB (15 SEC)ATO
CLEAR 50 FT
GROUND RUN
DISTANCE (1000 ft)
GROSS WEIGHT (1000 lb)
Climb
MAX POWER
NORMAL POWER
130,180 LB
190,090 LB
ALTITUDE (1000 ft)
RATE OF CLIMB-FT/MIN
Speed
130,180 LB
INITIAL BUFFET
130,180 LB
190,090 LB
M =0.81
M =0.76
SEE NOTE "e", PAGE 6
425 IAS LIMIT
MAX POWER
NORMAL POWER
PLACARD SPEED
ALTITUDE (1000 ft)
KNOTS
Radius
200,000 LB T. O. WT
720 LB CHAFF
103,080 LB FUEL
AVG. SPEED KNOTS
NAUTICAL MILES

NOTES

FORMULA: RADIUS MISSION I

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speeds increasing altitude with decreasing airplane weight, external tanks are dropped when empty. Climb so as to reach cruise ceiling 15 minutes from target. Run into target at normal power, drop chaff, conduct 2 minutes evasive action and 8 minutes escape from target at normal power. Cruise back to home base at long range speeds increasing altitude with decreasing airplane weight. Range free allowances include 5 minutes normal power fuel consumption for starting engines and take-off, 2 minutes normal power fuel consumption at combat altitude for evasive action and 20 minutes of maximum endurance (four engine) fuel consumption at sea level plus 5% of initial fuel load for landing reserve.

FORMULA: RANGE MISSION II

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speeds increasing altitude with decreasing airplane weight until all usable fuel is consumed, external tanks are dropped when empty. Range free allowances include, 5 minutes normal power fuel consumption for starting engines and take-off and 30 minutes of maximum endurance (four engines) fuel consumption at sea level plus 5% of initial fuel load for landing reserve.

GENERAL DATA:

(a) Engine ratings shown on page 3 are engine manufacturer's guaranteed ratings. Power values used for performance calculations are:

(6) J47-GE-25			
S.L.STATIC	LB	RPM	MIN
T.O.	6980	7950	5
Max:	5640	7800	30
Nor:	5270	7630	Cont

(b) For detailed planning refer to Technical Order No. 1B-47(R)E-1 and latest applicable technical orders.

(c) Maximum landing weight 180, 000 lb based on approximately 8 ft/sec ultimate rate of descent with 1G wing lift.

(d) All approved weight reduction items incorporated.

(e) Placards shown are for airplanes No. AF 51-5258 thru 52-728, Higher placards applying to the remainder of the airplanes are as shown for B-47E Heavyweight.

(f) Aircraft with Serial No. AF-51-5258 thru AF-52-719 utilize 510 gal ATO tank. Aircraft with Serial No. AF-52-720 and subsequent utilize 1220 gal aft Aux Tank.

(g) Any combination of (2 ea) of ALT-7, APT-8, APT-16A, ALT-6 or ALT-8.

(h) (33)14AS1000 ATO bottles can be utilized with or without the displacement racks however the displacement rack must be utilized in carrying the max compliment of (19) 15KS1000.

PERFORMANCE REFERENCE:

Boeing Report D-13194, "B-47 Performance Substantiation. Models B-47B (-23 engines), B-47E and RB-47E", dated 3 June 1953.

REVISION BASIS:

To reflect changes in characteristics and security classification.